

### **REMARKS**

Claims 1-22 are pending. Claim 1 has been amended herein. Applicant submits that no new matter has been added by way of the present amendment. New claim 22 is supported by pending claims 3 and 13. Also, claim 1 has been amended to indicate that “each layer on the image-forming layer side of the support comprising ingredients, each of which does not substantially contain  $\text{NH}_4^+$ , by applying a fluid containing the ingredients to a surface, the pH of the fluid being not modified by a pH modifier or the pH of the fluid being modified with a pH modifier that does not contain  $\text{NH}_4^+$ .”

Support for these limitations can be found in the present specification. By way of example, reference is made to Sample No. 1-9 described in Table 1 at page 106 of the present specification. As discussed as page 92 of the specification, Sample 1-9 includes an SBR latex binder in the coating solution for the image-forming layer. This SBR latex binder does not contain  $\text{NH}_4^+$ . Also, although other examples utilize pH modifiers that contain  $\text{NH}_4^+$ , Sample 1-9 utilizes NaOH as a pH modifier. This disclosure is not to be taken in a vacuum, but rather read in the context of the present invention, which invention requires at least one of the following limitations being met: “the  $\text{NH}_4^+$  content in all the layers formed on the image-forming layer side of the support is  $0.06 \text{ mmol/m}^2$  or less (Condition I)” and “the layers formed on the image-forming layer side of the support do not substantially contain ammonia (Condition II).” By necessity, all of the ingredients used to make up the layers on the image-forming layer side of the support, must meet or by implication must not interfere with either or both of these limitations.

Applicant has amended the claims to address a statement made by the Examiner. In particular, the Examiner has stated that:

“[t]he applicants argue in the Declaration that ‘SBR latex used as binder for image-forming layer in Example 1 described in the present disclosure of the present application, has glass transition of 17°C, was prepared by polymerization using  $K_2S_2O_8$  as polymerization initiator, and does not contain  $NH_4OH$  modifier.’ However, the applicants do not claim the latex or any type of initiator present in the argument.”

Applicant points out that it is not necessary to present claims that delineate every ingredient included in the image-forming layer. Regardless, the claims already contain very specific language to define the nature of such ingredients. For instance, claim 1 already indicates that the image-forming layer contains “a non-photosensitive silver salt, a photosensitive silver halide and a binder.” In order for these ingredients to satisfy Condition I and/or Condition II, the ingredients cannot substantially contain ammonia (or ammonium ion). These conditions extend to any pH modifier which might be used since although solvent may be removed, the basic nature of the pH modifiers, for example a pH modifier including  $NH_4^+$ , cannot be removed. In an effort to clarify this aspect of the present invention, Applicant has amended claim 1 as above.

In view of the following remarks, Applicant respectfully requests that the Examiner withdraw all rejections and allow the currently pending claims.

Issues Under 35 U.S.C. §102(b)/103(a)

The Examiner has rejected claims 1-16 and 18-20 under 35 U.S.C. §102(b) as being anticipated by or, in the alternative under 35 U.S.C. § 103(a) as being obvious over JP 2000-112072 (hereinafter referred to as JP ‘072). The Examiner has also rejected claim 17 under 35 U.S.C. §103(a) as being obvious over JP ‘072 in view of Ito et al, EP 1096310 (Ito ‘310).

Applicant respectfully traverses each of the above rejections and herein incorporates all previously submitted arguments.

Applicant respectfully submits that none of the references cited by the Examiner (JP '072 and Ito '310) suggest or disclose the subject matter of the present claims. The present claims relate to a photothermographic material which must satisfy at least one of two specific conditions, Condition I and Condition II. As discussed above, these conditions are as follows:

Condition I includes the limitation that

the  $\text{NH}_4^+$  content in all the layers formed on the image-forming layer side of the support is  $0.06 \text{ mmol/m}^2$  or less

Condition II includes the limitation that the

film surface pH of the image-forming layer side of the support is substantially unchanged after coating, and the layers formed on the image-forming layer side of the support do not substantially contain ammonia

Neither of Condition I or Condition II are satisfied, either expressly or inherently by the cited art. Applicant has submitted suitable evidence on this point and request that the Examiner closely investigate this evidence and the arguments relating thereto. The Examiner's attention is again directed to the previously submitted Declarations. These Declarations include (1) the Nakano Declaration submitted on November 22, 2002, (2) the Oikawa Declaration submitted on November 7, 2003 and (3) the Oikawa Declaration submitted on May 11, 2004.

The Declarative Evidence is particularly important as it reveals the lack of inherency of the present subject matter in the cited references. Without such inherent disclosure there can be

no anticipation. Further, absent inherent disclosure, the lack of any motivation, such as might be provided by explicit disclosure, to arrive at Condition I or Condition II, prevents a proper *prima facie* case of obviousness from being asserted.

As explained in previous Responses, the references fail to suggest or disclose Condition I or Condition II. This is discussed below.

The references fails to disclose, either explicitly or inherently, Condition I or Condition II.

The primary reference cited by the Examiner is JP '072. In the November 7, 2003 Oikawa Declaration, three samples (Samples 1, 2, and 3) were tested. Sample 3 was prepared according to Sample 3 shown in Table 1 of JP '072.

A review of the results for Sample 3 reveal that the amounts of ammonium ion in all the layers formed on the image forming side are outside of the claimed ranges. Sample 3 contained 0.23 mmol/m<sup>2</sup> of ammonium ion in all the layers formed on the image forming layer side. However, Condition I of the present claims requires that the amount of ammonium ion in all the layers formed on the image-forming layer side of the support be 0.06 mmol/m<sup>2</sup> or less. Condition II of the claims requires that the layers formed on the image-forming layer side of the support do not substantially contain ammonia. Neither of these conditions is achieved by the cited art.

The Examiner's attention is directed to the fact that regardless of the modification of layer surface pH of the samples, the NH<sub>4</sub><sup>+</sup> content is not affected. Once the NH<sub>4</sub><sup>+</sup> content has been set by the LACSTAR 3370B binder, the use of acids (such as NaOH) or pH buffers may

provide different counter anions, but does not alter the actual  $\text{NH}_4^+$  content in the samples. This will be discussed further below.

The Examiner has asserted that Samples Nos. 12-14 described in Table 1 in paragraph [0285] of JP '072 were prepared by using NaOH as a pH buffer and their surface pH values were set to 5.2, 6.2 or 6.5. While this may be true, these conditions do not affect  $\text{NH}_4^+$  content requirements of Conditions I or II of the present claims.

Each of Samples 12-14 of JP '072 were prepared using LACSTAR 3370B as a binder. LACSTAR 3370B contains a considerable amount of  $\text{NH}_4^+$  as was demonstrated in the Nakano Declaration submitted on November 22, 2002. Accordingly, regardless of the type of pH modifier used or the value of the layer surface pH, as long as LACSTAR 3370B is used as a binder, the  $\text{NH}_4^+$  content in all of the layers formed on the image-forming sides of Samples 12-14 will be determined based upon the  $\text{NH}_4^+$  content of LACSTAR 3370B.

Further, it was demonstrated in the Oikawa Declaration submitted on November 7, 2003 that the  $\text{NH}_4^+$  content in all of the layers formed on the image-forming sides of the samples, which were prepared using LACSTAR 3370B as a binder, was almost  $0.25 \text{ mmol/m}^2$ . It is therefore evident that the samples described in JP '072 contain  $\text{NH}_4^+$  in an amount much larger than  $0.06 \text{ mmol/m}^2$  as required by Condition I. Such amounts also are greater than layers that do "not substantially contain ammonia" as required by Condition II.

The  $\text{NH}_4^+$  content is not decided by the layer surface pH. The layer surface pH of a sample is varied depending upon types of acids or bases contained in the sample. If the layer surface pH of a sample prepared according to JP '072 (using LACSTAR 3370B as a binder) is

adjusted to 5.2, 6.2 or 6.5, the  $\text{NH}_4^+$  content is not changed. The counter anions for  $\text{NH}_4^+$  may change, but the  $\text{NH}_4^+$  molecules cannot be physically removed from the sample.

The fact that the  $\text{NH}_4^+$  content is a sample prepared using LACSTAR 3370B as a binder is almost  $0.25 \text{ mmol/m}^2$  was also shown in the latest Oikawa Declaration submitted on May 11, 2004. Sample Nos. 7-9, 12-14 and 17-19 of Example 1 of U.S. 6,100,022 were prepared using NaOH or phosphoric acid as a pH buffer and their surface pH values were set to 4.9, 5.5 or 6.2. However, since they were prepared using LACSTAR 3370B as a binder, as proven in the latest Declaration, the  $\text{NH}_4^+$  contents of the samples were almost  $0.25 \text{ mmol/m}^2$ .

Accordingly, as discussed above, it is evident that Sample Nos. 12-14 described in Table 1 at paragraph [0285] of JP '072 contained  $\text{NH}_4^+$  is an amount of almost  $0.25 \text{ mmol/m}^2$ , which is greater than the amounts required by the claims. Additionally, in the latest Oikawa Declaration submitted on May 11, 2004 it was demonstrated that samples whose  $\text{NH}_4^+$  contents were almost  $0.25 \text{ mmol/m}^2$  could not reduce the different in the line widths in the same manner as a composition falling with the scope of independent claim 1.

Accordingly, the cited references of JP '072 and Ito '310 fail to achieve the presently claimed subject matter. The references also lack any explicit disclosure of Condition I or Condition II, thus no anticipation exists. Additionally, there also exists no *prima facie* case of obviousness. Specifically, there exists no motivation in any of the references including the secondary reference of Ito '310 to achieve the presently claimed subject matter. Thus, the Examiner has failed to present a valid *prima facie* case of obviousness.

However, even if the Examiner has hypothetically established a *prima facie* case of obviousness, a point not conceded by Applicant, Applicant submits that the presently claimed

subject matter achieves unexpectedly superior results compared to the cited art. For instance, in the latest Oikawa Declaration submitted on May 11, 2004 it was demonstrated that samples whose  $\text{NH}_4^+$  contents were almost  $0.25 \text{ mmol/m}^2$  could not reduce the different in the line widths in the same manner as a composition falling with the scope of independent claim 1.

Also, as shown in the Table 1 of the present specification, the claimed invention shows much lower temperature and humidity dependency than samples No. 1-3 and No. 1-8. Applicant submits that one skilled in the art could not have expected that such excellent effects could be obtained by satisfying Condition I of the claimed invention.

Further, as shown in Table II of the present specification, the claimed invention shows much lower temperature and humidity dependency than comparative samples that do not satisfy Condition II. Applicant submits that one skilled in the art could not have expected that such excellent effects could be obtained by satisfying Condition II of claimed invention.

Accordingly, Applicant respectfully submits that the Examiner has failed to present a valid case of anticipation or *prima facie* case of obviousness. Further, even if the Examiner has hypothetically presented a *prima facie* case of obviousness, the unexpected results according to the present invention with respect to temperature and humidity dependency, rebut any hypothetical *prima facie* case of obviousness. Accordingly, the Examiner is respectfully requested to withdraw all rejections and allow the currently pending claims.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie (Reg. No. 42,874) at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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